# SpecView from WATLOW

## Addendum to SpecView Manual

# HMI Software

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# 1 Chapter 1: Introduction

SpecView is a powerful and easy-to-use Human Machine Interface software package. The purpose of this addendum is to quickly get you up and running using SpecView with Watlow controllers. Chapter 2 provides a brief explanation of concepts that may not be familiar to first time users of SpecView. Basic familiarity with these concepts is assumed in Chapter 3 which provides procedures to walk you through getting Watlow controllers communicating with SpecView. Chapter 4 describes features that support Watlow controllers.

## Additional Resources

In addition to this addendum the following resources are available for learning about SpecView from and other products available from Watlow:

- *SpecView User's Manual*—ships with purchased copies of SpecView and available at Watlow.com in the Download Center's User Manuals section; search for "SpecView".
- *SpecView Secrets Video Tutorial Series*—available at Watlow.com in the Download Center's Training and Education section.
- *SpecView Quick Start Guide*—and other tutorial documents available at Watlow.com in the Download Center's White Paper section; search for "SpecView".
- *SpecView from Watlow Frequently Asked Questions*—available at Watlow.com in the Download Center's White Paper section; search for "SpecView".
- *SpecView from Watlow Software Download*—the latest version of SpecView from Watlow is always available at Watlow.com in the Download Center's Software and Demos section; search for "SpecView".
- *SpecView from Watlow Field Upgrade Order Form*—guides you through the process of adding features to a copy of SpecView you already own. Get the form at Watlow.com in the Download Center's Software and Demos section; search for "SpecView".

# 2 Chapter 2: About Setting up Communications

The following sections provide information to help you understand how to set up communications between SpecView and Watlow controllers.

## Protocol Drivers

SpecView includes support for hundreds of different devices. The protocol drivers included with SpecView tell it how to communicate with specific devices. You will need to choose the appropriate

driver whenever you want to automatically or manually set up communications between SpecView and one or more devices.

There are several protocol drivers that support Watlow products. The table below lists these protocol drivers and the Watlow models supported by each.

| Protocol Driver | Protocol(s) | Supported Watlow Models | Notes |
|---|---|---|---|
| Watlow EZ-ZONE Standard Bus | Standard Bus | EZ-ZONE PM, EZ-ZONE RM, EZ-ZONE ST | Recommended for EZ-ZONE. |
| Watlow Modbus[1] | Modbus RTU<br>Modbus TCP | SERIES 96, 97, SD MICRODIN, POWER SERIES,<br>986, 987, 988, 989<br>SERIES F4 Ramping | Limited support for programming SERIES F4 profiles. |
| Watlow F4 Profile | Modbus RTU | SERIES F4 Ramping | Allows saving profiles as recipes. Requires Series F4 Programmer ordering option. |
| Anafaze 16 Loop | Modbus RTU | 16CLS, 16MLS, CLS216, MLS316 | Standard firmware option only |
| Anafaze 32 Loop | Modbus RTU | 32MLS, MLS332 | Standard firmware option only |
| Anafaze 8 Loop | Modbus RTU | 4CLS, CLS204, 8CLS, CLS208 | Standard firmware option only |
| Anafaze Ramp/Soak | Modbus RTU | CLS204, CLS208, CLS216, MLS316, MLS332 | Ramp/Soak Profile programming and operation |
| Anafaze/AB | ANAFAZE | 32MLS | Proprietary Anafaze protocol |

[1]The initial release of the EZ-ZONE PM and EZ-ZONE ST are supported by the Watlow Modbus protocol driver. Features added to the PM and ST in subsequent releases and other EZ-ZONE products are not supported. For that reason, use of the Modbus driver with EZ-ZONE products is no longer described in this document.

All the protocol drivers listed in the table above that support Modbus RTU are compatible with each other. SpecView allows compatible protocol drivers to be used on the same port, but you will need to help SpecView by instructing it when to do so. When there are controllers connected to the same port that require different drivers, you will scan once for each required protocol driver to automatically detect the various devices.

If your configuration requires communicating with controllers supported by different protocols, each protocol must have its own network connected to SpecView via a separate communications port. Support for multiple communication ports is an ordering option for SpecView, and is field upgradeable.

# Automatic and Manual Configuration

SpecView can automatically detect and set up communications with controllers. However, in some cases it may be preferable to manually configure SpecView. This method is particularly useful if you want to create screens and configure SpecView prior to receiving your controllers. It is also possible to manually add or remove controllers from any configuration whether it was created automatically or manually. This addendum contains procedures for automatically and manually configuring communications for the various networking options supporting Watlow controllers.

# Naming Instruments

When you add instruments to a configuration manually, you have the opportunity to name them as you wish. It is useful to name instruments such that you can easily relate what you see on the screen in SpecView to your equipment and processes. You might want to use a name that:

- Indicates the controller's function in the process
- Indicates the controller's location in the panel
- Includes network information such as port and address

When you add instruments to a SpecView configuration by automatically detecting them, they are named automatically based on a default name plus one or more numbers. For the Watlow EZ-ZONE Standard Bus driver, the automatic names include the communications port, an instrument name, the controller's address and for instruments where more than one instance can occur at the same address, the instance number. For example, the first control loop instrument for an EZ-ZONE controller at zone 5 on communications port 7 is named, "C7-EZ-5 Ctlr-1". You can change the instrument name whenever you like. See *Rename an Instrument* on page 18.

# Saving Settings in Non-Volatile Memory

Some Watlow controllers protect their non-volatile memory from being worn out prematurely due to excessive use that can occur when communicating with devices such as a PLC that can send the same setting to the controller many times a second. In these controllers by default the settings received via communications are held in volatile memory that is cleared when the controller is turned off. Since SpecView will typically only send parameter settings when you edit a parameter on the screen, for your convenience you can set the controller to routinely save the parameter settings that come through communications, The table below lists the parameters for the controllers with this feature.

| Controller | Instrument | Parameter | Setting |
|---|---|---|---|
| EZ-ZONE PM | PM Controller<br>PM Limit<br>PM Zone | Com 1 Flash Mem Save | Yes |
| EZ-ZONE ST | ST Controller | Non-Volatile Save | Yes |
| EZ-ZONE RM | RM Zone | Com 1 Flash Mem Save | Yes |

# Using EZ-ZONE Controllers

When automatically detecting a Standard Bus network, SpecView reads each device's part number and adds the appropriate instruments. The table below lists for each instrument with which part numbers it is used and the format of the address string that must be entered when configuring SpecView manually.

### SpecView Address Strings for EZ-ZONE Devices

The addresses entered into SpecView for each instrument consist of one or two parts. The table below indicates which instruments require the second part. Device addresses consist of:

- "z" the Zone number or Standard Bus address (1 to 9, A, B, C, D, E, F, H or J)
- A semicolon when an offset is required
- The offset or instance number for some PM and RM instruments including the control loop, limit, auxiliary input and single CT. For the individual Function Block instruments the offset is shown as "o" in the Address String; in that case enter the instance number of the function block. For example, for Alarm 7 in an RM at zone 5 the Address String is, "5;7".

| Model | For part numbers matching… | Add… *Instrument Name* (Description) | Address String | Named[1] |
|---|---|---|---|---|
| PM | PMxxxxx-xxxx(A or C)xx | *PM Zone* (alarm, digital input, output, global and diagnostic) | z | Cn-EZ-z Zone |
| | PMxYxxx-xxxx(A or C)xx (Y = C, R, B, J, N, E or S) | *Control-Loop* (setup and monitor loop 1) | z;1 | Cn-EZ-z Ctlr-1 |
| | PMxxxxx-xYxx(A or C)xx (Y = C or J) | *Control-Loop* (setup and monitor loop 2) | z;2 | Cn-EZ-z Ctlr-2 |
| | PMxxxxx-xYxx(A or C)xx (Y = L or M) | *Integrated Limit* | z | Cn-EZ-z Limit |
| | PMxxxxx-xYxx(A or C)xx (Y = R or P) | *Auxiliary Input* | z;2 | Cn-EZ-z AI-2 |
| | PMxxxxx-xTxx(A or C)xx | *Single Current Input* | z;1 | Cn-EZ-z CT-1 |
| | PMxxxxx-xxxxCxx | *PM Function Blocks* | z | Cn-EZ-z FB |
| | PMxYxxx-xxxx(A or C)xx (Y = L, M or D) | *Stand Alone and RM Limit* (not in PM with a control loop) | z;1 | Cn-EZ-z Limit-1 |
| | PMxYxxx-xxxxxxx (Y = R, B, N or E) | *PM Profiling* (program and operate ramp-soak profiles) | z | Cn-EZ-z Prof |
| | PMxCxxx-xxxxBxx | *PM Express Controller* | z | Cn-EZ-z Ctlr |
| | PMxLxxx-xxxxBxx | *PM Express Limit_* | z | Cn-EZ-z Limit |
| RMA | RMAx-xxxx-xxxx | *RMA Zone* (global and diagnostic) | z | Cn-EZ-z Zone |
| | RMAx-xYxx-xxxx (Y = 2, 3, 5, or 6) | *RMA Gateway* | Z | Cn-EZ-z GW |
| | RMAx-xxxD-xxxx | *RM Data Logging* | z | Cn-EZ-z Log |
| RMC | RMCxxxxxxxxxxxx | *RM Zone* (alarms, actions globals and diagnostics) | z | Cn-EZ-z Zone |
| | RMCxxxxxxxxxxxx | *RMC Outputs 1 to 8* | z | Cn-EZ-z Out |
| | RMCxxxxxxxxxxxx | *RM Function Blocks*[2] | z | Cn-EZ-z FB |
| | RMCYxxxxxxxxxx (Y = 1, 2, 3 or 4) | *Control-Loop* (setup and monitor control loop 1) | z;1 | Cn-EZ-z Ctlr-1 |
| | RMCxx(1 or 2)xxxxxxxx | *Control-Loop* (setup and monitor control loop 2) | z;2 | Cn-EZ-z Ctlr-2 |
| | RMCxxxx(1 or 2)xxxxxxx | *Control-Loop* (setup and monitor control loop 3) | z;3 | Cn-EZ-z Ctlr-3 |
| | RMCxxxxxx(1 or 2)xxxxx | *Control-Loop* (setup and monitor control loop 4) | z;4 | Cn-EZ-z Ctlr-4 |
| | RMC(5 or 6)xxxxxxxxxx | *Stand Alone and RM Limit* (set up and monitor limit 1) | z;1 | Cn-EZ-z Lim-1 |

| Model | For part numbers matching… | Add… *Instrument Name* (Description) | Address String | Named[1] |
|---|---|---|---|---|
| RMC (cont.) | RMCxx(5 or 6)xxxxxxxxx | *Stand Alone and RM Limit* (set up and monitor limit 2) | z;2 | Cn-EZ-z Lim-2 |
| | RMCxxxx(5 or 6)xxxxxxx | *Stand Alone and RM Limit* (set up and monitor limit 3) | z;3 | Cn-EZ-z Lim-3 |
| | RMCxxxxxx(5 or 6)xxxxx | *Stand Alone and RM Limit* (set up and monitor limit 4) | z;4 | Cn-EZ-z Lim-4 |
| | RMC7xxxxxxxxxx | *Single Current Input* (set up and monitor current input 1) | z;1 | Cn-EZ-z CT-1 |
| | RMCxx7xxxxxxxx | *Single Current Input* (set up and monitor current input 2) | z;2 | Cn-EZ-z CT-2 |
| | RMCxxxx7xxxxxx | *Single Current Input* (set up and monitor current input 3) | z;3 | Cn-EZ-z CT-3 |
| | RMCxxxxxx7xxxxx | *Single Current Input* (set up and monitor current input 4) | z;4 | Cn-EZ-z CT-4 |
| | RMCxx(R or P)xxxxxxxxx | *Auxiliary Input* (set up and monitor analog input 2) | z;2 | Cn-EZ-z AI-2 |
| | RMCxxxx(R or P)xxxxxxx | *Auxiliary Input* (set up and monitor analog input 3) | z;3 | Cn-EZ-z AI-3 |
| | RMCxxxxxx(R or P)xxxxx | *Auxiliary Input* (set up and monitor analog input 4) | z;4 | Cn-EZ-z AI-4 |
| | RMCxxxxxxCxxxx | *Digital I/O 07 to 12* | z | Cn-EZ-z DIO 07-12 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Profile Operation* (setup and operate ramp and soak) | z | Cn-EZ-z Prof Ops |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Profiles 1 to 5* (program profiles steps 1 to 50) | z | Cn-EZ-z Prof 1-5 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Profiles 6 to 10* (program steps 51 to 100) | z | Cn-EZ-z Prof 6-10 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Profiles 11 to 15* (program steps 101 to 150) | z | Cn-EZ-z Prof 11-15 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Profiles 16 to 20* (program steps 151 to 200) | z | Cn-EZ-z Prof 16-20 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Profiles 21 to 25* (program steps 201 to 250) | z | Cn-EZ-z Prof 21-25 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Sub Routines 1 to 5* (sub routine steps 1 to 50) | z | Cn-EZ-z SR-1-5 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Sub Routines 6 to 10* (sub routine steps 51 to 100) | z | Cn-EZ-z SR-6-10 |
| | RMC(3 or 4)xxxxxxxxxxx | *RMC Sub Routines 11 to 15* (sub routine steps 101 to 150) | z | Cn-EZ-z SR-11-15 |

| Model | For part numbers matching… | Add… *Instrument Name* (Description) | Address String | Named[1] |
|---|---|---|---|---|
| RME | RMEx-xxxx-xxxx | *RM Zone* (alarms, actions globals and diagnostics) | z | Cn-EZ-z Zone |
| | RMEx-xxxx-xxxx | *RM Function Blocks*[2] | z | Cn-EZ-z FB |
| | RMEx-Cxxx-xxxx | *Digital I/O 01 to 06* | z | Cn-EZ-z DIO 01-06 |
| | RMEx-(J or K)xxx-xxxx | *RME Output Slot A* | z | Cn-EZ-z A Out |
| | RMEx-xCxx-xxxx | *Digital I/O 07 to 12* | z | Cn-EZ-z DIO 07-12 |
| | RMEx-x(J or K)xx-xxxx | *RME Output Slot B* | z | Cn-EZ-z B Out |
| | RMEx-xxCx-xxxx | *Digital I/O 13 to 18* | z | Cn-EZ-z DIO 13-18 |
| | RMEx-xx(J or K)x-xxxx | *RME Output Slot D* | z | Cn-EZ-z D Out |
| | RMEx-xxxC-xxxx | *Digital I/O 19 to 24* | z | Cn-EZ-z DIO 19-24 |

| | | | | |
|---|---|---|---|---|
| RMH | RMHx-xxxx-xxxx | *RM Zone* (alarms, actions globals and diagnostics) | z | Cn-EZ-z Zone |
| | | *RM Function Blocks*[2] | z | Cn-EZ-z FB |
| | RMHx-(1 or 2)xxx-xxxx | *Control-Loop* (setup and monitor control loop 1) | z;1 | Cn-EZ-z Ctlr-1 |
| | | *Control-Loop* (loop 2) | z;2 | Cn-EZ-z Ctlr-2 |
| | | *Control-Loop* (loop 3) | z;3 | Cn-EZ-z Ctlr-3 |
| | | *Control-Loop* (loop 4) | z;4 | Cn-EZ-z Ctlr-4 |
| | RMHx-x(1 or 2)xx-xxxx | *Control-Loop* (loop 5) | z;5 | Cn-EZ-z Ctlr-5 |
| | | *Control-Loop* (loop 6) | z;6 | Cn-EZ-z Ctlr-6 |
| | | *Control-Loop* (loop 7) | z;7 | Cn-EZ-z Ctlr-7 |
| | | *Control-Loop* (loop 8) | z;8 | Cn-EZ-z Ctlr-8 |
| | RMHx-xx(1 or 2)x-xxxx | *Control-Loop* (loop 9) | z;9 | Cn-EZ-z Ctlr-9 |
| | | *Control-Loop* (loop 10) | z;10 | Cn-EZ-z Ctlr-10 |
| | | *Control-Loop* (loop 11) | z;11 | Cn-EZ-z Ctlr-11 |
| | | *Control-Loop* (loop 12) | z;12 | Cn-EZ-z Ctlr-12 |
| | RMHx-xxx(1 or 2)-xxxx | *Control-Loop* (loop 13) | z;13 | Cn-EZ-z Ctlr-13 |
| | | *Control-Loop* (loop 14) | z;14 | Cn-EZ-z Ctlr-14 |
| | | *Control-Loop* (loop 15) | z;15 | Cn-EZ-z Ctlr-15 |
| | | *Control-Loop* (loop 16) | z;16 | Cn-EZ-z Ctlr-16 |
| | RMHx-xx(J or C)x-xxxx | *Digital I/O 01 to 06* | z | Cn-EZ-z DIO 01-06 |
| | RMHx-xxx(J or C)-xxxx | *Digital I/O 07 to 12* | z | Cn-EZ-z DIO 07-12 |

| Model | For part numbers matching… | Add… *Instrument Name* (Description) | Address String | Named[1] |
|---|---|---|---|---|
| RML | RMLx-xxxx-xxxx | *RM Zone* (alarms, actions globals and diagnostics) | z | Cn-EZ-z Zone |
| | | *RM Function Blocks*[2] | z | Cn-EZ-z FB |
| | | *Stand Alone and RM Limit* (set up and monitor limit 1) | z;1 | Cn-EZ-z Lim-1 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 2) | z;2 | Cn-EZ-z Lim-2 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 3) | z;3 | Cn-EZ-z Lim-3 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 4) | z;4 | Cn-EZ-z Lim-4 |
| | RMLx-x(5 or 6)xx-xxxx | *Stand Alone and RM Limit* (set up and monitor limit 1) | z;5 | Cn-EZ-z Lim-5 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 2) | z;6 | Cn-EZ-z Lim-6 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 3) | z;7 | Cn-EZ-z Lim-7 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 4) | z;8 | Cn-EZ-z Lim-8 |
| | RMLx-xx(5 or 6)x-xxxx | *Stand Alone and RM Limit* (set up and monitor limit 1) | z;9 | Cn-EZ-z Lim-9 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 2) | z;10 | Cn-EZ-z Lim-10 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 3) | z;11 | Cn-EZ-z Lim-11 |
| | | *Stand Alone and RM Limit* (set up and monitor limit 4) | z;12 | Cn-EZ-z Lim-12 |
| | RMLx-xx(J or C)x-xxxx | *Digital I/O 01 to 06* | z | Cn-EZ-z DIO 01-06 |
| | RMLx-xxxx-xxxx | *Digital I/O 07 to 12* | z | Cn-EZ-z DIO 07-12 |

| | | | | |
|---|---|---|---|---|
| RMS | RMSx-xxxx-xxxx | *RM Zone* (alarms, actions globals and diagnostics) | z | Cn-EZ-z Zone |
| | | *RM Function Blocks*[2] | z | Cn-EZ-z FB |
| | | *Auxiliary Input (input 1)* | z;1 | Cn-EZ-z AI-1 |
| | | *Auxiliary Input (input 2)* | z;2 | Cn-EZ-z AI-2 |
| | | *Auxiliary Input (input 3)* | z;3 | Cn-EZ-z AI-3 |
| | | *Auxiliary Input (input 4)* | z;4 | Cn-EZ-z AI-4 |
| | RMSx-x(R or P)xx-xxxx | *Auxiliary Input (input 5)* | z;5 | Cn-EZ-z AI-5 |
| | | *Auxiliary Input (input 6)* | z;6 | Cn-EZ-z AI-6 |
| | | *Auxiliary Input (input 7)* | z;7 | Cn-EZ-z AI-7 |
| | | *Auxiliary Input (input 8)* | z;8 | Cn-EZ-z AI-8 |

| Model | For part numbers matching… | Add… *Instrument Name* (Description) | Address String | Named[1] |
|---|---|---|---|---|
| RMS (cont.) | RMSx-xx(R or P)x-xxxx | *Auxiliary Input (input 9)* | z;9 | Cn-EZ-z AI-9 |
| | | *Auxiliary Input (input 10)* | z;10 | Cn-EZ-z AI-10 |
| | | *Auxiliary Input (input 11)* | z;11 | Cn-EZ-z AI-11 |
| | | *Auxiliary Input (input 12)* | z;12 | Cn-EZ-z AI-12 |
| | RMSx-xxx(R or P)-xxxx | *Auxiliary Input (input 13)* | z;13 | Cn-EZ-z AI-13 |
| | | *Auxiliary Input (input 14)* | z;14 | Cn-EZ-z AI-14 |
| | | *Auxiliary Input (input 15)* | z;15 | Cn-EZ-z AI-15 |
| | | *Auxiliary Input (input 16)* | z;16 | Cn-EZ-z AI-16 |
| | RMSx-xx(J or C)x-xxxx | *Digital I/O 01 to 06* | z | Cn-EZ-z DIO 01-06 |
| | RMSx-xxx(J, C or B)-xxxx | *Digital I/O 07 to 12* | z | Cn-EZ-z DIO 07-12 |

| | | | | |
|---|---|---|---|---|
| RM[2] | RMYx-xxxx-xxxx (Y = E, H, L or S) or RMCxxxxxxxxxxx | *Function Block: Action* | z;o | EZ Act- |
| | | *Function Block: Alarm* | z;o | EZ Alm- |
| | | *Function Block: Compare* | z;o | EZ Cmp- |
| | | *Function Block: Counter* | z;o | EZ Ctr- |
| | | *Function Block: Linearization* | z;o | EZ Lnr- |
| | | *Function Block: Logic* | z;o | EZ Lgc- |
| | | *Function Block: Math* | z;o | EZ Math- |
| | | *Function Block: Special Output* | z;o | EZ SOF- |
| | | *Function Block: Timer* | z;o | EZ Tmr- |
| | | *Function Block: Variable* | z;o | EZ Var- |

| | | | | |
|---|---|---|---|---|
| ST | STxx-xxxx-xxxx | *ST Controller* (setup and monitor control loop and limit) | z | Cn-EZ-z Ctlr |
| | STxx-xxxx-xPxx | *ST Profiling* (program and operate ramp-soak profiles) | z | Cn-EZ-z Prof |

**Notes**

[1]Instrument names are shown as automatically detected by SpecView where “n” is replaced by the port number and “z” is replaced by the zone number (also known as Standard Bus address).

[2]The RM Function Block instrument includes four or eight instances of each type of function block. Several types of EZ-ZONE RM modules support more function block instances. To access these additional instances, use the function block specific instruments. These instruments are not automatically added to configurations.

# 3 Chapter 3: Setup Procedures

The following sections provide procedures for establishing communications between SpecView and Watlow controllers.

## Automatically Detect a New Standard Bus, 485 or 232 Network

The following procedure guides you through the process of configuring SpecView to communicate with Watlow controllers via Standard Bus, 232 and 485 serial communications. It is assumed that the controllers are connected correctly to one or more of the computer's serial communications ports. To add a controller to an existing configuration, see *Manually Set up or Modify a Standard Bus, 485 or 232 Network* on page 13.

**To create a configuration automatically:**

1) Set all controllers to the same baud rate. (Not necessary for Standard Bus.)

2) Set each controller to a unique address or zone number.

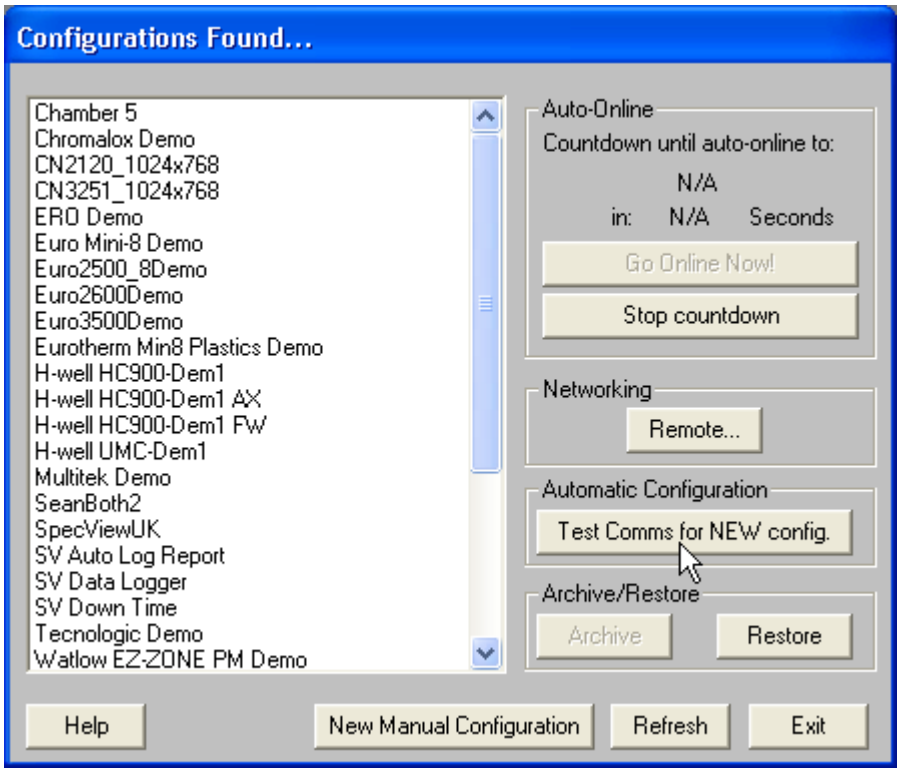
3) Launch SpecView and click through any informational dialogs until you get to the **Configurations Found** dialog.

4) Click **Stop countdown**.

5) Click **Test Comms for NEW config**.

6) Enter a name for the configuration.

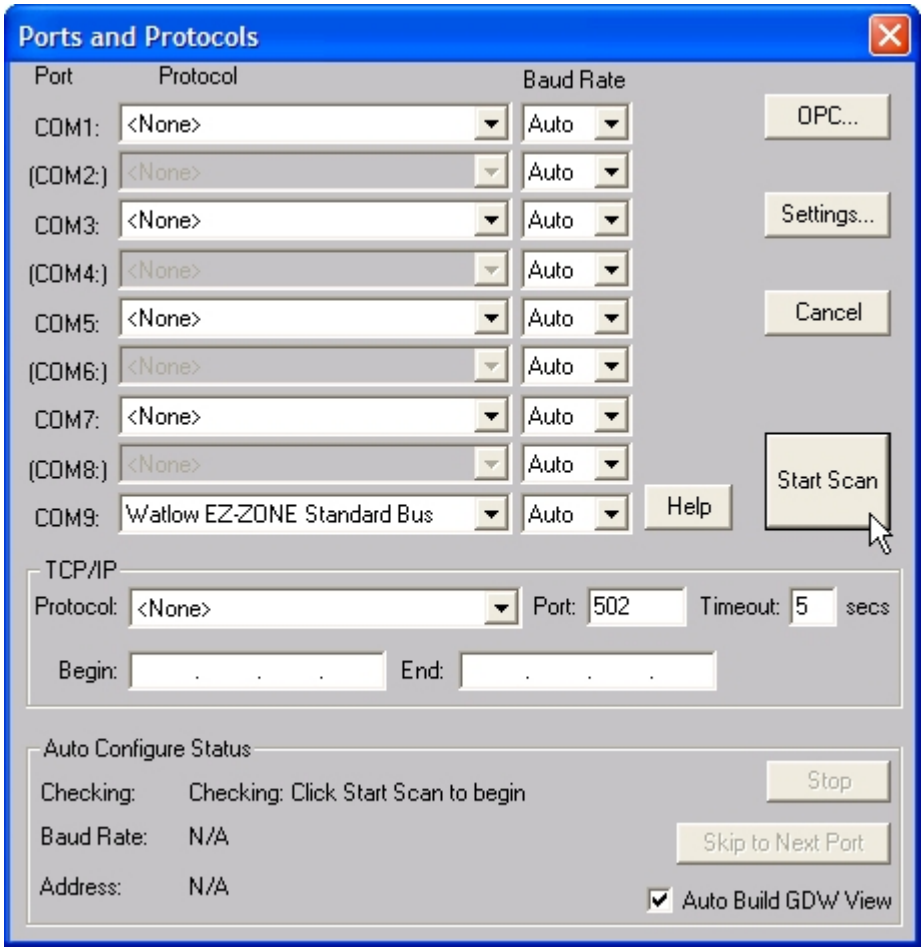
7) Click **OK**.



8) For the **Port** to which the controllers are attached, choose the appropriate protocol driver in **Protocol**. See the table below.

**Note:** If there are controllers on the same port that require different drivers, you will need to repeat steps 8 to 10 for each protocol.

9) Click **Start Scan**.

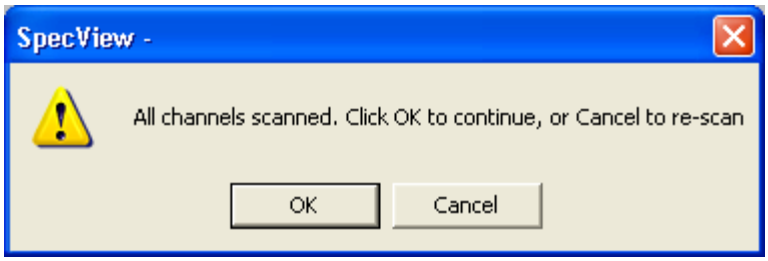



| For this Controller… | Choose this Protocol Driver… | Notes |
|---|---|---|
| EZ-ZONE PM, RM or ST | Watlow EZ-ZONE Standard Bus | |
| SERIES 96, 97, SD MICRODIN, POWER SERIES, 986, 987, 988, 989 | Watlow Modbus | |
| SERIES F4 Ramping | Watlow Modbus<br>Watlow F4 Programmer[1] | For the SERIES F4 Profiling controller, scan twice, once with each protocol driver. Add the F4 Cascade instrument manually if desired. |
| 16CLS, 16MLS, CLS216, MLS316 | Anafaze 16 Loop | Standard and CLS200 and MLS300 Ramp/Soak firmware options. For controllers with Ramp/Soak to add the Anafaze Profile Status and the desired Anafaze Profile instruments, see *Manually Set up or Modify a Standard Bus, 485 or 232 Network* on page 14. |
| 32MLS, MLS332 | Anafaze 32 Loop | |
| 8CLS, CLS208<br>4CLS, CLS204 | Anafaze 8 Loop | |
| 32MLS (Anafaze protocol) | Anafaze/AB | |

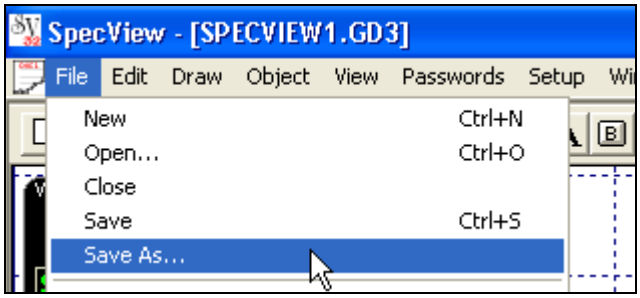
[1]Scan with the Watlow F4 Programmer driver only if the F4 programmer option is enabled.

10) If another protocol must be scanned, click **Cancel** and repeat this procedure from step 8 for the next protocol.

11) Click **OK**.




12) To save the GDW:
- From the **File** menu, choose **Save As.**
- Enter a **File name** for the GDW.
- Click **Save**.




**Note:** When the controllers are automatically detected using Modbus, SpecView is configured to display parameters such as set point and process variable as whole numbers. See *Adjust the Displayed Decimals* on page 20 to use another decimal setting.

# Manually Set up or Modify a Standard Bus, 485 or 232 Network

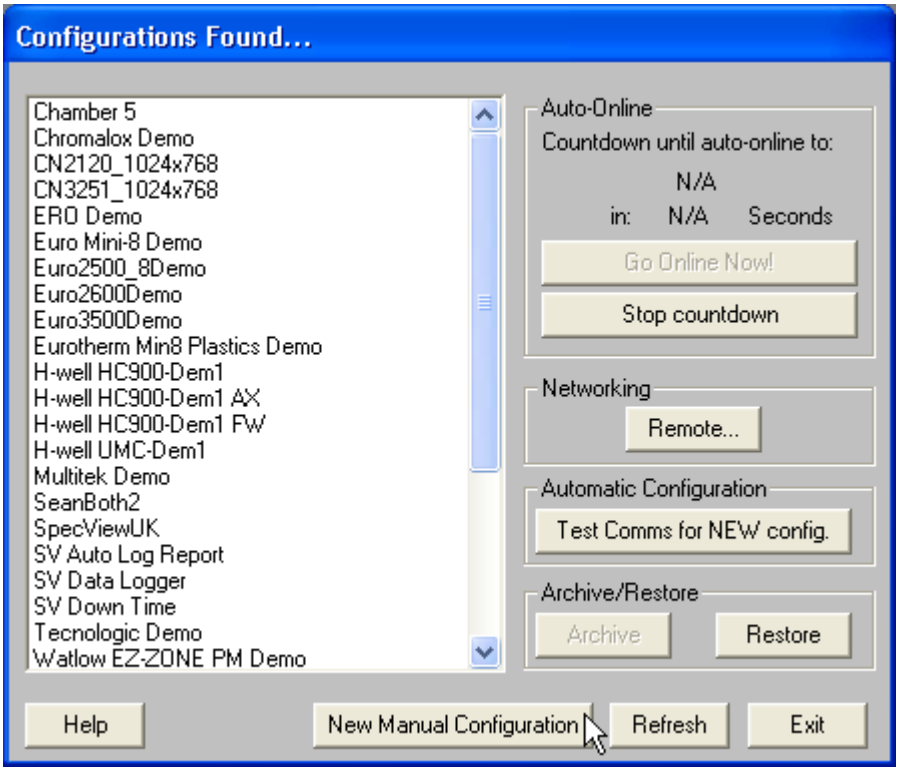
The following procedures guide you through the process of manually creating a configuration for a Standard Bus, 485 or 232 network and adding devices to a configuration. Use this procedure when the controllers are not available to detect automatically or when you want to add a new controller to an existing configuration and therefore do not want to automatically create a new configuration.

**To create a manual configuration:**

1) Launch SpecView.

2) Click through any informational dialogs until you get to the **Configurations Found** dialog.

3) Click **New Manual Configuration**.




4) Enter a name for the configuration.

5) Click **OK**.

**To add one or more instruments to a configuration:**

1) Open the Graphical Display Window in the configuration mode if it is not already open.

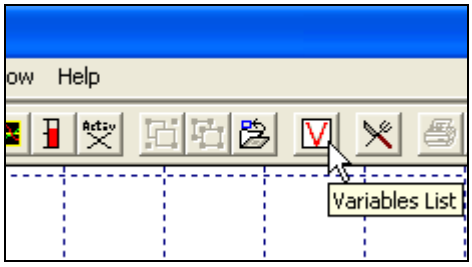
2) Click the **Variables** button.

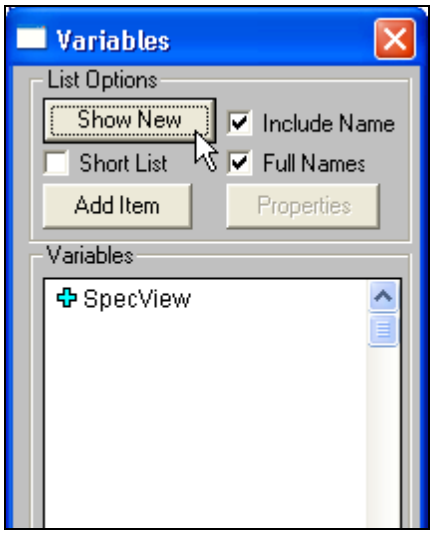
3) Click **Show New**.

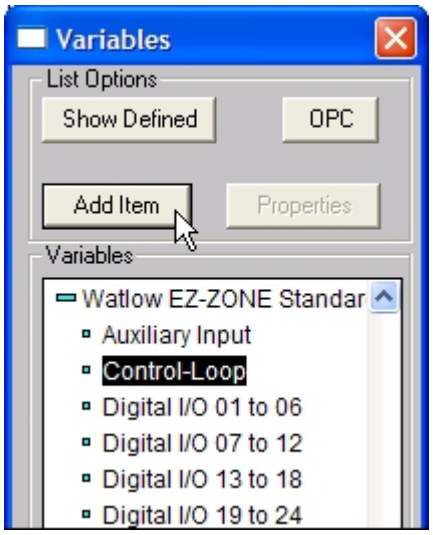
4) In the **Variables** list click the ✚ button next to the protocol driver that includes the instrument you want to add. See the table below.

5) Select the instrument you want to add.

6) Click **Add Item**.




| For This Controller… | From this Protocol Driver… | Add These Instruments… | With Address String… |
|---|---|---|---|
| EZ-ZONE PM | Watlow EZ-ZONE Standard Bus | See *Using EZ-ZONE Controllers* on page *5*. | |
| EZ-ZONE PM Express Controller[1] | Watlow EZ-ZONE Standard Bus | PM Express Controller | z |
| EZ-ZONE PM Express Limit[1] | Watlow EZ-ZONE Standard Bus | PM Express Limit_ | z |
| EZ-ZONE RM | Watlow EZ-ZONE Standard Bus | See *Using EZ-ZONE Controllers* on page *5*. | |
| EZ-ZONE ST | Watlow EZ-ZONE Standard Bus | ST Controller | z |
| | | ST Profiling[2] | z |
| MICRODIN | Watlow Modbus | MicroDin | z,0 |
| SERIES 96 | Watlow Modbus | Series 96 | z,0 |
| SERIES 97 | Watlow Modbus | SERIES 97 Limit | z,0 |
| SERIES SD | Watlow Modbus | SERIES SD Controller | z,0 |
| | | SERIES SD Profiling[2] | z,0 |
| SERIES SD Limit | Watlow Modbus | SERIES SD Limit | z,0 |
| 986, 987, 988, 989 | Watlow Modbus | Watlow 988 | z,0 |
| POWER SERIES | Watlow Modbus | Watlow PC-11 SCR | z,0 |
| SERIES F4 Ramping | Watlow Modbus | Watlow F4 | z,0 |
| | | F4 Cascade | z,0 |
| | Watlow F4 Programmer | Watlow F4 Program[3] | z,0 |
| 16CLS, 16MLS, CLS216, MLS316 | Anafaze 16 Loop | MLS CPU | z,1M |
| | | MLS(16)Ch (1 per loop) | z,1M;n (n = loop) |

| For This Controller… | From this Protocol Driver… | Add These Instruments… | With Address String… |
|---|---|---|---|
| 32MLS, MLS332 | Anafaze 32 Loop | MLS CPU | z,1M |
| | | MLS(32)Ch (1 per loop) | z,1M;n (n = loop) |
| 8CLS, CLS208<br>4CLS, CLS204 | Anafaze 8 Loop | MLS CPU | z,1M |
| | | CLS(8)Ch (1 per loop) | z,1M;n (n = loop) |
| CLS204, CLS208,<br>CLS216, MLS316,<br>MLS332 | Anafaze Ramp/Soak | Anafaze Profile Status[2] | z,1M |
| | | Anafaze Profile A to Anafaze Profile Q (as many as desired to program) [2] | z,1M |
| 32MLS (Anafaze protocol) | Anafaze/AB | Anafaze CPU | z,0,1 |
| | | Anafaze MLS32 Channel(1/loop) | z,n,1 (n = loop) |

[1]For PM model numbers of the form PMxxxxx-AAAABxx.
[2]Add these instruments for a controller that includes the ramp and soak or profiling option.
[3]Add the Watlow F4 Program instrument only if the F4 programmer option is enabled in the SpecView key.

7) In the **Add/Rename Instrument** dialog type a **Name** for the instrument.

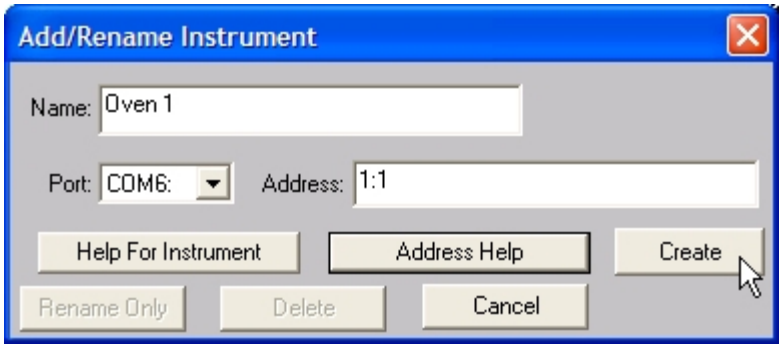
8) Select the **Port**.

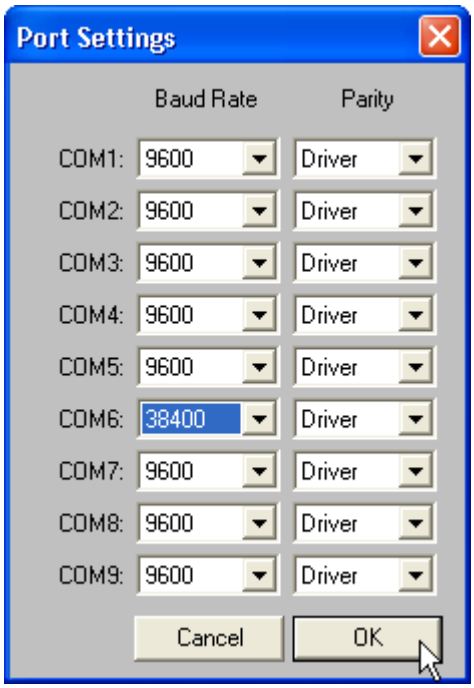
9) Enter the **Address** in the form from the table above where **z** is the address or zone number set in the controller.

10) Click **Create**.

11) The first time you add an instrument on a port, SpecView opens the **Port Settings Dialog**. When this happens:
    - Set the **Baud Rate** for the **Port** (for Standard Bus no change is needed)**.**
    - Click **OK.**

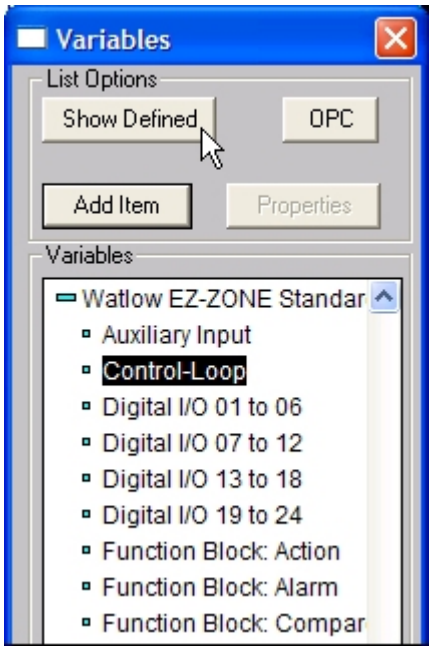
12) Repeat from step 4 for each instrument to be added.

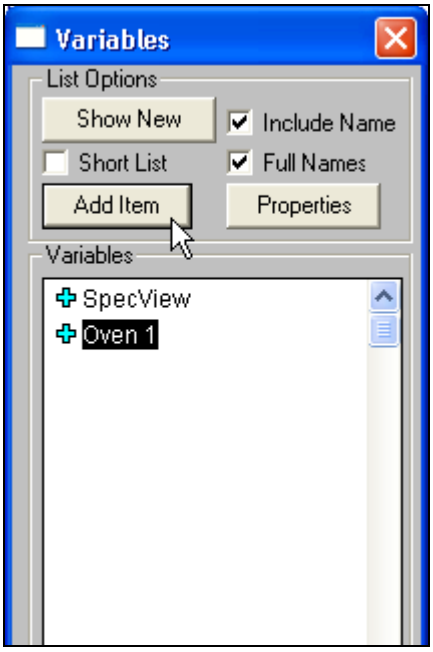


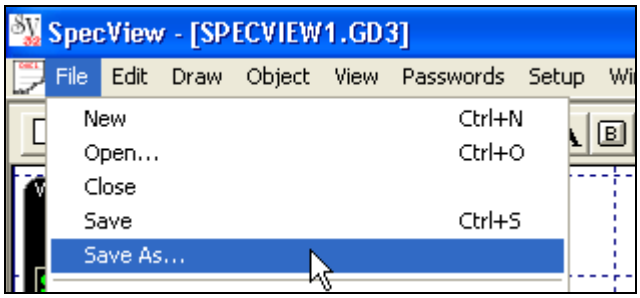
13) Click **Show Defined**.

14) To add instrument views to the GDW, for each:
- In the **Variables** list select the instrument**.**
- Click **Add Item**.




15) To save the GDW:
- From the **File** menu, choose **Save As.**
- Enter a **File name** for the GDW.
- Click **Save**.




**Note:** This procedure configures SpecView to display parameters such as set point and process variable as whole numbers when communicating by Modbus. See *Adjust the Displayed Decimals* on page 20 to use another decimal setting.

# Rename an Instrument

In order to more easily correlate items in SpecView's Graphical Display Windows (GDWs) with the devices and processes they represent you may want to change an instrument's name. The following procedures illustrate how to change a controller's name and how to replace any instrument views with renamed ones.

---

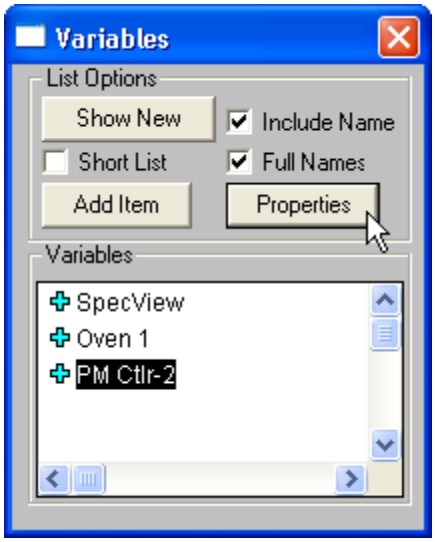
**To rename an instrument:**

1) With SpecView running, from the **File** menu choose **Configuration Mode**.

2) Click to open the Variables list.

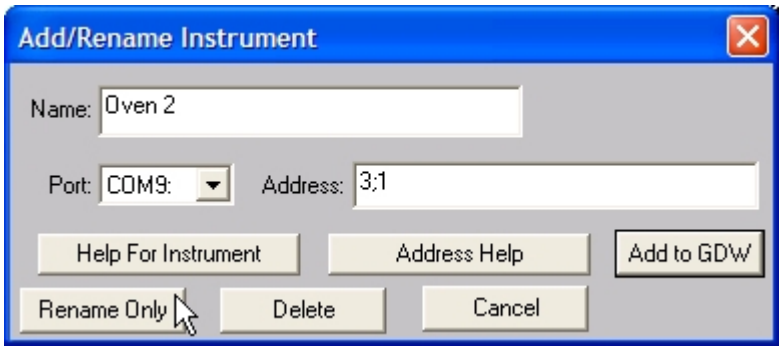
3) Select the controller you want to rename.

4) Click **Properties**.




5) Enter the desired **Name.**

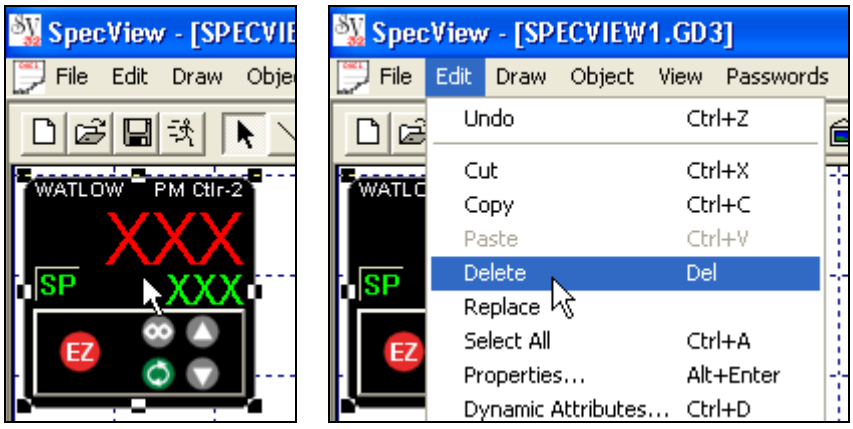
6) Click **Rename Only**.




**Note:** Instrument views on screens are not updated automatically, but can be replaced.

**To replace an instrument view:**

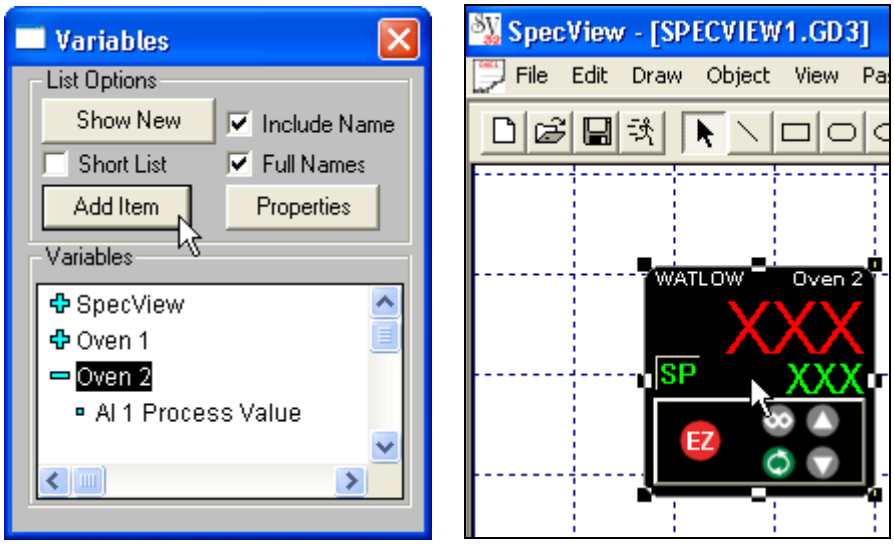
1) Delete the instrument view to be replaced:
   - Select the instrument view by clicking it.
   - From the **Edit** menu, choose **Delete.**




2) In the **Variables List** select the instrument to add.

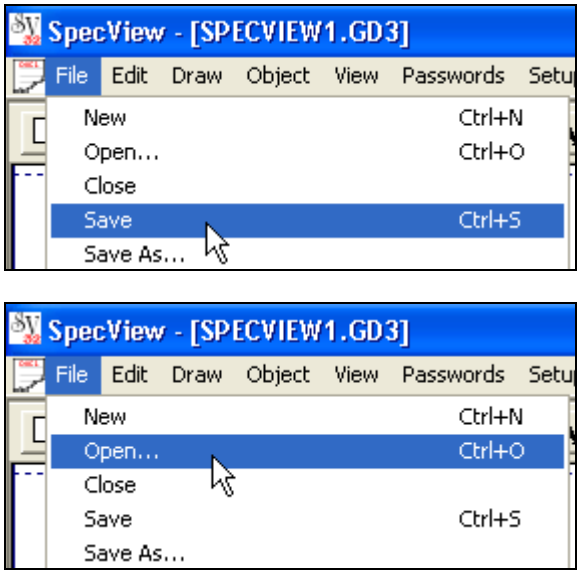
3) Click **Add Item**.

4) Drag the instrument view to place it where you want it.




5) To save the GDW:
   - From the **File** menu, choose **Save.**

6) To update another GDW:
   - From the **File** menu, choose **Open.**
   - Locate and select the GDW.
   - Click **Open**.
   - Repeat from step 1 above.



# Adjust the Displayed Decimals

The following procedures describe how to adjust the number of decimal places displayed in SpecView.

Note this procedure does not apply to EZ-ZONE controllers communicating with SpecView by Watlow EZ-ZONE Standard Bus because with that protocol the decimal places are automatically displayed according to the controller setting.

**To make the number of decimal places displayed in SpecView match the controller display:**

1) Set the decimal setting in the controller as desired. (See the table for details about each controller.

| For This Controller… | For Sensor Type… | Parameter in SpecView… | Parameter in Controller… | Available Decimals |
|---|---|---|---|---|
| MICRODIN | Any | Decimal Point | (No Display) | 0 or 1 |
| SERIES 96 | Thermocouple, RTD | Decimal Pt 1 | dEC1 | 0 or 1 |
| | Process | Decimal Pt 1 | dEC1 | 0 to 3 |
| SERIES 97 | Any | Decimal 1 | dEC1 | 0 or 1 |
| SERIES SD Controller | Thermocouple, RTD | See Note[1] | dEC | 0 or 1 |
| SERIES SD Limit | Process (mA, mV, V) | See Note[2] | dEC | 0 to 3 |
| POWER SERIES | Not available | | | |
| 986, 987, 988, 989 | Any | Decimal 1<br>Decimal 2 | dEC1 | 0 to 3 |
| SERIES F4 Ramping | Thermocouple, RTD, Wet Bulb-Dry Bulb | Input 1 DecPlaces<br>Input 2 DecPlaces<br>Input 3 DecPlaces | Choose Decimal | 0 or 1 |
| | Process | Input 1 DecPlaces<br>Input 2 DecPlaces<br>Input 3 DecPlaces | Choose Decimal | 0 to 3 |
| CLS, MLS, CLS200, MLS300 | Thermocouple, RTD | Precision | Disp Format | 1 |
| | Linear | Precision | Disp Format | 0 to 4 |

[1]For a SERIES SD with a thermocouple or RTD set the *Decimals (Ctlr Temp Display Only)* parameter, the *Decimals (SpecView and Ctlr Prcs Display)* parameter and SpecView for the same number of decimals.

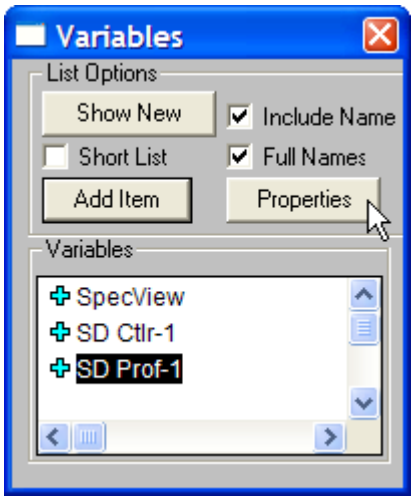
[2]For a SERIES SD with a process input (mA, mV or V) set the *Decimals (SpecView and Ctlr Prcs Display)* parameter and SpecView for the same number of decimals.

2) With SpecView running, to enter the configuration mode, from the **File** menu choose **Configuration Mode**.

3) Click to open the Variables list.

4) Select the controller.

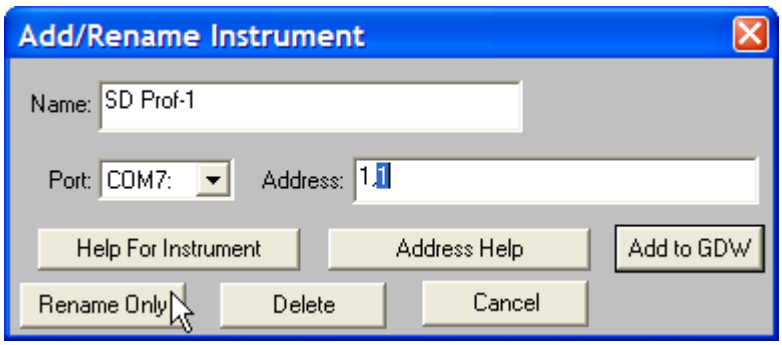
5) Click **Properties**.



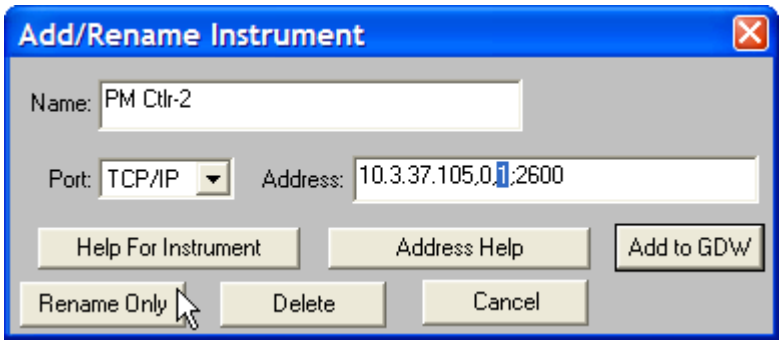

6) In the **Address** field set the decimal places corresponding to the controller setting
0 for whole numbers,
1 for tenths,
2 for hundredths,
3 for thousandths
4 for ten-thousandths:

- For Modbus RTU protocol set the number after the comma.
- For Modbus TCP or Anafaze/AB protocols set the number after the second comma.

7) Click **Rename Only**.

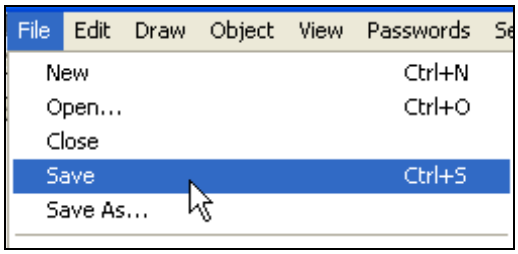



Modbus RTU: the decimal setting is after the comma




Modbus TCP: the decimal setting is after the second comma

8) To save the GDW:
- From the **File** menu, choose **Save.**



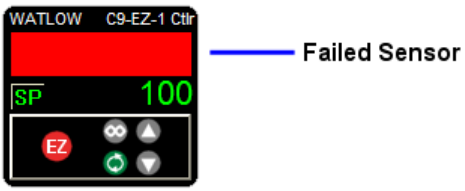

**Note:** The possible decimal settings may depend on other controller settings such as the sensor type. Not all parameters are affected by the decimal setting.

# 4 Chapter 4: Feature Reference

This chapter describes the instrument views supporting Watlow EZ-ZONE products.

## Failed Sensor Indication

When the area that normally displays a process value on an instrument view is covered by a red rectangle, the instrument is indicating that the sensor has failed.

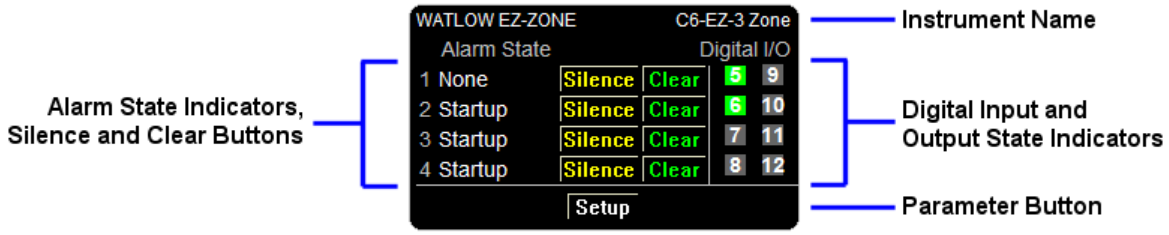



**Failed sensor indication**

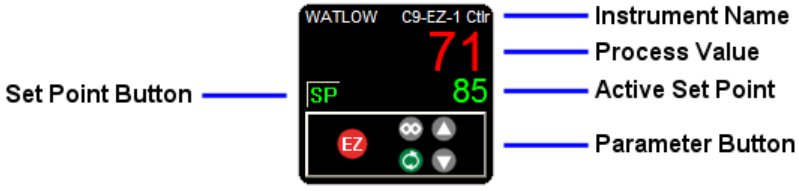
**CAUTION:** This feature may not be available for all instruments, so take the appropriate precautions to insure fail-safe system operation.

## EZ-ZONE PM Instruments

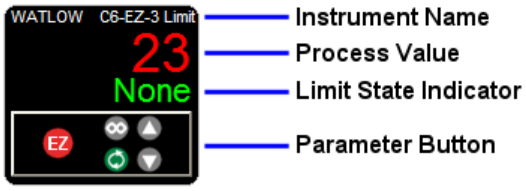
EZ-ZONE PM controllers, limit controller and integrated controller are supported by the *PM Zone*, *Control Loop*, *Integrated Limit*, *Stand Alone and RM Limit*, *Auxiliary Input*, *Single Current Input*, *PM Function Blocks*, *PM Profiling*, *PM Express Controller* and *PM Express Limit_* instruments. The corresponding instrument views are illustrated below.



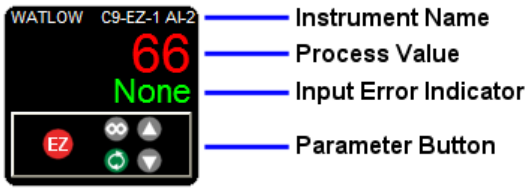

***PM Zone***



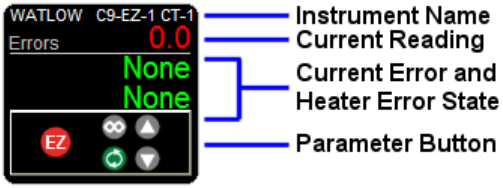

***Control Loop* and *PM Express Controller***



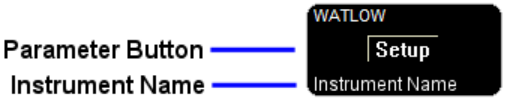

***Integrated Limit*, *Stand Alone and RM Limit* and *PM Express Limit***_



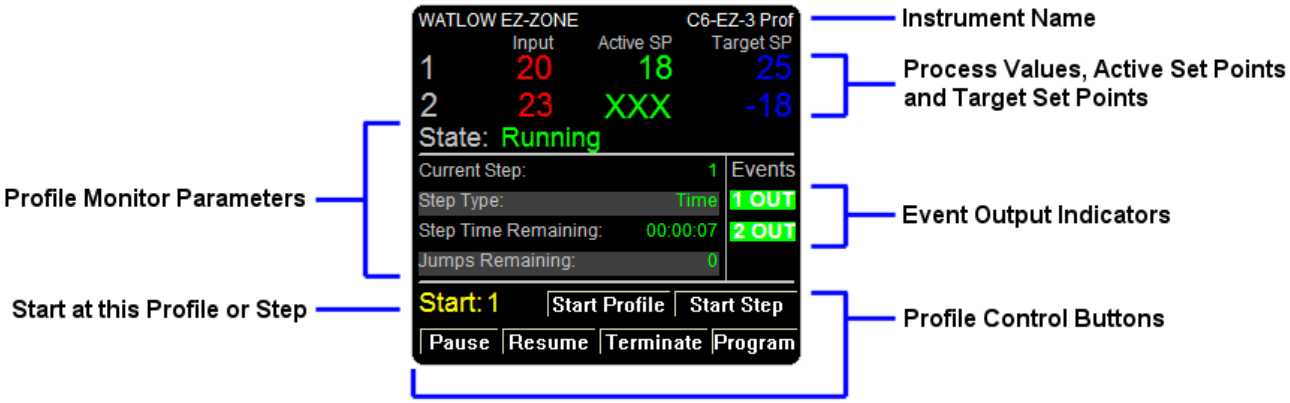

***Auxiliary Input***




***Single Current Input***



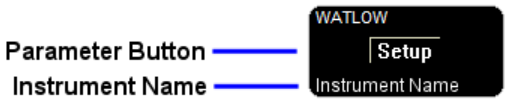

***PM Function Blocks***




***PM Profiling***

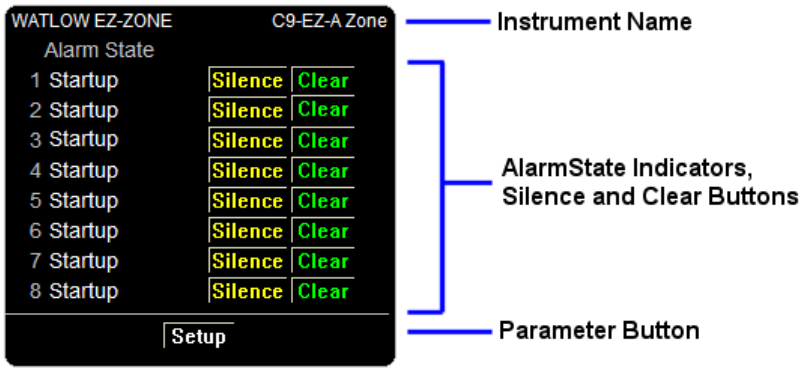
# EZ-ZONE RM Instruments

EZ-ZONE RM control systems are supported by a wide variety of instruments. The *RMA Zone, RMA Gateway, RM Data Logging, RMC Outputs 1 to 8, RM Function Blocks*, as well as eight instruments for programming profiles and sub routines in RM control modules and three instruments for configuring expansion module outputs are supported with the simple parameter button instrument view.

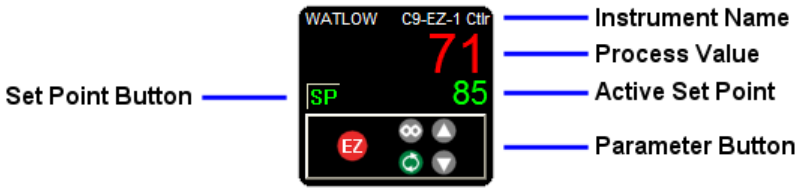



***Parameter Button instrument View.***

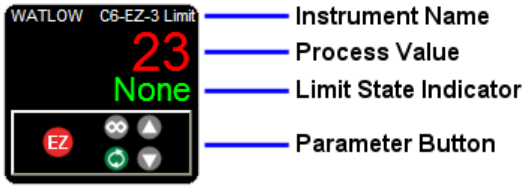
The *RM Zone*, *Control Loop*, *Stand Alone and RM Limit*, *Auxiliary Input*, *Single Current Input* and *RMC Profile Operation* instruments and a sample of the four *Digital I/O* instruments are illustrated below.



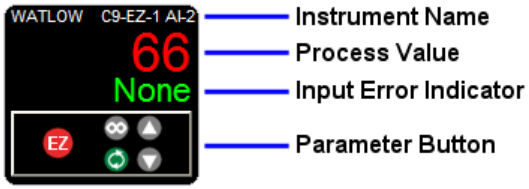

***RM Zone***



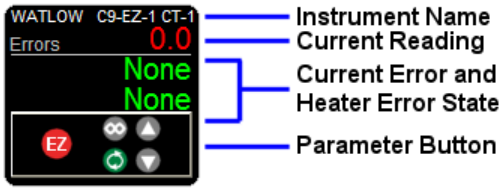

***Control Loop***



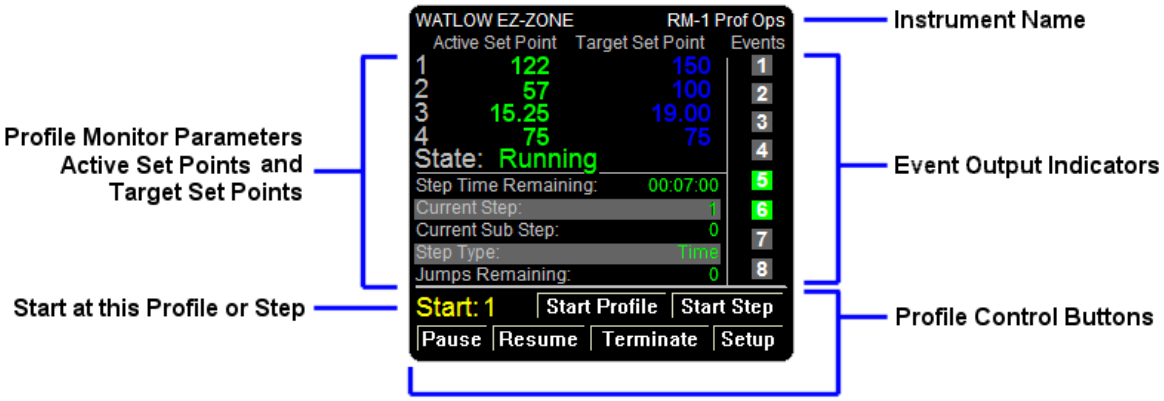

***Stand Alone and RM Limit***



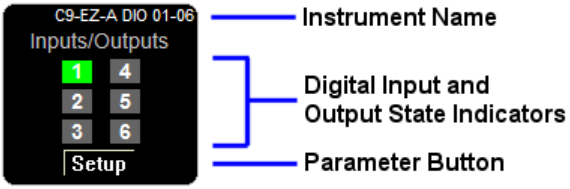

***Auxiliary Input***




*Single Current Input*



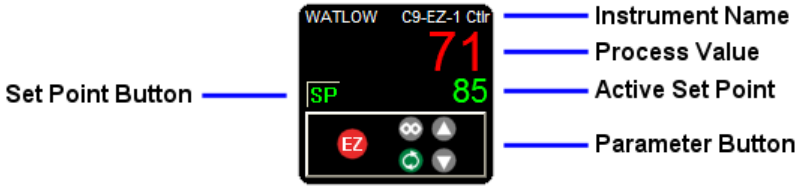

*RMC Profile Operation*



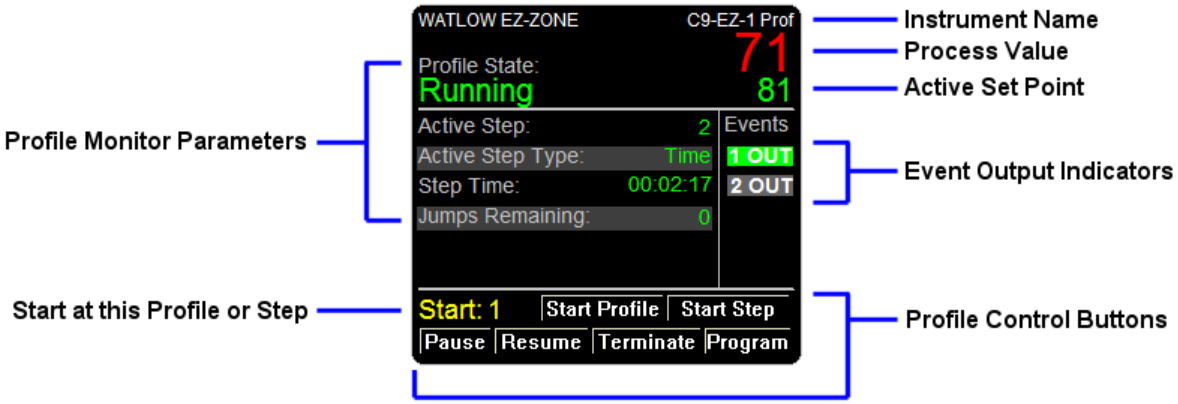

*Digital I/O*

# EZ-ZONE ST Instruments

The EZ-ZONE ST is supported by the *ST Controller* and *ST Profiling* instruments. The corresponding instrument views are illustrated below.




*ST Controller*




***ST Profiling***

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